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10/618,079	07/10/2003	Qiang Shen	VIA-002-PAP	3636

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EXAMINER	
MILLER, BRANDON J	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/618,079	SHEN ET AL.
	Examiner	Art Unit
	Brandon J. Miller	2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 July 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6-17,19-30,32-43 and 45-52* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6-17,19-30,32-43,45-52* is/are rejected.

7)☒ Claim(s) *5,18,31 and 44* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Allowable Subject Matter

Claims 5, 18, 31, and 44 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4, 7-11, 13-17, 20-24, 26-30, 33-37, 39-43, 46-50 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamel et al. (US 6,496,531 B1) in view of Bender (5,978,413).

Regarding claim 1 Kamel teaches a system for communicating data signals using a spread spectrum cellular network (see col. 1, lines 7-10). Kamel teaches a plurality of base stations coupled to the cellular network, each base station of the plurality of base stations including means for transmitting a pilot signal sequence (see col. 2, lines 55-64 and col. 4, lines 55-57). Kamel teaches a mobile unit coupled to the cellular network and assigned to one of the plurality of base stations (active base station) (see col. 2, lines 55-64 and col. 4, lines 58-60, base station transmitting channel D1 relates to active base station). Kamel teaches the mobile unit receiving a signal of another of the plurality of base stations (target base station) (see col. 4, lines

50-54). Kamel teaches the mobile unit determining the interference density to the target base station from the received signal (see col. 6, lines 60-65). Kamel does not specifically teach synchronizing an orthogonal code sequence with the orthogonal code sequence boundary of the target base station's pilot sequence. Kamel does teach base stations with different P/N code sequences that are orthogonal to each other (see col. 5, lines 27-31). Bender teaches synchronizing an orthogonal code sequence with the orthogonal code sequence boundary of another pilot sequence (see col. 8, lines 42-59). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device adapt to include synchronizing an orthogonal code sequence with the orthogonal code sequence boundary of the target base station's pilot sequence because the device in Kamel teaches base stations with different P/N code sequences that are orthogonal to each other (see Kamel, col. 5, lines 27-31) and modifying it to include the synchronization in Bender (see, Bender col. 8, lines 42-59) would allow for the mobile station in Kamel to more accurately determining the interference density to the target base station from the received signal (see Kamel, col. 6, lines 60-65).

Regarding claim 2 Kamel and Bender teach a device as recited in claim 1 except for correlating the received signal with a corresponding P/N sequence of the target base station; correlating the selected orthogonal code sequence with the P/N correlated target pilot sequence of the target base station; and determining the energy of the orthogonally correlated P/N correlated target pilot sequence. Kamel does teach pilot codes (PN code offsets) (see col. 6, lines 44-46) and measuring energy (see col. 6, lines 62-64). Bender does teach correlating the received signal with a corresponding set of pilot data and determining the energy of the correlated pilot sequence (see col. 5, lines 34-38). It would have been obvious to one of ordinary skill

skill in the art at the time the invention was made to make the device adapt to include correlating the received signal with a corresponding P/N sequence of the target base station; correlating the selected orthogonal code sequence with the P/N correlated target pilot sequence of the target base station; and determining the energy of the orthogonally correlated P/N correlated target pilot sequence because the device in Kamel teaches base stations with different P/N code sequences that are orthogonal to each other (see Kamel, col. 5, lines 27-31) and modifying it to include the synchronization in Bender (see, Bender col. 8, lines 42-59) would allow for the mobile station in Kamel to more accurately determining the interference density to the target base station from the received signal (see Kamel, col. 6, lines 60-65).

Regarding claim 3 Kamel teaches wherein the orthogonal code sequence is a Walsh code sequence (see col. 6, lines 26-31).

Regarding claim 4 Kamel teaches wherein the cellular network is a CDMA based network and each base station of the plurality of base stations represents a network cell (see col. 1, lines 7-10 and FIG. 1).

Regarding claim 7 Bender teaches determining the power of the received base station pilot signal sequence (see col. 8, lines 60-63).

Regarding claim 8 Bender teaches providing the ratio of the determined pilot signal power and interference density to the active base station (see col. 8, lines 52-59).

Regarding claim 9 Kamel and Bender teach a device as recited in claim 1 except for correlating the received signal with a corresponding P/N sequence of the target base station; correlating the a pilot orthogonal code sequence with the target bases station's P/N sequence; and determining the power of the target bases station's P/N correlated signal; and determining the

energy of the orthogonally correlated P/N correlated target pilot sequence. Kamel does teach pilot codes (PN code offsets) (see col. 6, lines 44-46) and measuring energy (see col. 6, lines 62-64). Bender does teach correlating the received signal with a corresponding set of pilot data and determining the energy of the correlated pilot sequence (see col. 5, lines 34-38). Bender does teach determining the power of the target bases station's P/N correlated signal (see col. 8, lines 60-63). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device adapt to include correlating the received signal with a corresponding P/N sequence of the target base station; correlating the a pilot orthogonal code sequence with the target bases station's P/N sequence; and determining the power of the target bases station's P/N correlated signal; and determining the energy of the orthogonally correlated P/N correlated target pilot sequence because the device in Kamel teaches base stations with different P/N code sequences that are orthogonal to each other (see Kamel, col. 5, lines 27-31) and modifying it to include the synchronization in Bender (see, Bender col. 8, lines 42-59) would allow for the mobile station in Kamel to more accurately determining the interference density to the target base station from the received signal (see Kamel, col. 6, lines 60-65).

Regarding claim 10 Kamel and Bender teach a device as recited in claim 3 and is rejected given the same reasoning as above.

Regarding claim 11 Kamel and Bender teach a device as recited in claim 4 and is rejected given the same reasoning as above.

Regarding claim 13 Kamel and Bender teach a device as recited in claim 8 and is rejected given the same reasoning as above.

Regarding claim 14 Kamel teaches a mobile unit for communicating data signals using a spread spectrum cellular network (see col. 1, lines 7-10 and col. 2, lines 56-64). Kamel teaches a plurality of base stations coupled to the cellular network, each base station of the plurality of base stations including means for transmitting a pilot signal sequence (see col. 2, lines 55-64 and col. 4, lines 55-57). Kamel teaches a mobile unit coupled to the cellular network and assigned to one of the plurality of base stations (active base station) (see col. 2, lines 55-64 and col. 4, lines 58-60, base station transmitting channel D1 relates to active base station). Kamel teaches the mobile unit receiving a signal of another of the plurality of base stations (target base station) (see col. 4, lines 50-54). Kamel teaches the mobile unit determining the interference density to the target base station from the received signal (see col. 6, lines 60-65). Kamel does not specifically teach synchronizing an orthogonal code sequence with the orthogonal code sequence boundary of the target base station's pilot sequence. Kamel does teach base stations with different P/N code sequences that are orthogonal to each other (see col. 5, lines 27-31). Bender teaches synchronizing an orthogonal code sequence with the orthogonal code sequence boundary of another pilot sequence (see col. 8, lines 42-59). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device adapt to include synchronizing an orthogonal code sequence with the orthogonal code sequence boundary of the target base station's pilot sequence because the device in Kamel teaches base stations with different P/N code sequences that are orthogonal to each other (see Kamel, col. 5, lines 27-31) and modifying it to include the synchronization in Bender (see, Bender col. 8, lines 42-59) would allow for the mobile station in Kamel to more accurately determining the interference density to the target base station from the received signal (see Kamel, col. 6, lines 60-65).

Regarding claim 15 Kamel and Bender teach a device as recited in claim 2 and is rejected given the same reasoning as above.

Regarding claim 16 Kamel and Bender teach a device as recited in claim 3 and is rejected given the same reasoning as above.

Regarding claim 17 Kamel and Bender teach a device as recited in claim 4 and is rejected given the same reasoning as above.

Regarding claim 20 Kamel and Bender teach a device as recited in claim 7 and is rejected given the same reasoning as above.

Regarding claim 21 Kamel and Bender teach a device as recited in claim 8 and is rejected given the same reasoning as above.

Regarding claim 22 Kamel and Bender teach a device as recited in claim 9 and is rejected given the same reasoning as above.

Regarding claim 23 Kamel and Bender teach a device as recited in claim 3 and is rejected given the same reasoning as above.

Regarding claim 24 Kamel and Bender teach a device as recited in claim 4 and is rejected given the same reasoning as above.

Regarding claim 26 Kamel and Bender teach a device as recited in claim 8 and is rejected given the same reasoning as above.

Regarding claim 27 Kamel teaches a method for communicating data signals using a spread spectrum cellular network (see col. 1, lines 7-10). Kamel teaches a plurality of base stations coupled to the cellular network, each base station of the plurality of base stations including means for transmitting a pilot signal sequence (see col. 2, lines 55-64 and col. 4, lines

55-57). Kamel teaches a mobile unit coupled to the cellular network and assigned to one of the plurality of base stations (active base station) (see col. 2, lines 55-64 and col. 4, lines 58-60, base station transmitting channel D1 relates to active base station). Kamel teaches receiving a signal of another of the plurality of base stations (target base station) (see col. 4, lines 50-54). Kamel teaches determining the interference density to the target base station from the received signal (see col. 6, lines 60-65). Kamel does not specifically teach synchronizing an orthogonal code sequence with the orthogonal code sequence boundary of the target base station's pilot sequence. Kamel does teach base stations with different P/N code sequences that are orthogonal to each other (see col. 5, lines 27-31). Bender teaches synchronizing an orthogonal code sequence with the orthogonal code sequence boundary of another pilot sequence (see col. 8, lines 42-59). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device adapt to include synchronizing an orthogonal code sequence with the orthogonal code sequence boundary of the target base station's pilot sequence because the device in Kamel teaches base stations with different P/N code sequences that are orthogonal to each other (see Kamel, col. 5, lines 27-31) and modifying it to include the synchronization in Bender (see, Bender col. 8, lines 42-59) would allow for the mobile station in Kamel to more accurately determining the interference density to the target base station from the received signal (see Kamel, col. 6, lines 60-65).

Regarding claim 28 Kamel and Bender teach a device as recited in claim 2 and is rejected given the same reasoning as above.

Regarding claim 29 Kamel and Bender teach a device as recited in claim 3 and is rejected given the same reasoning as above.

Regarding claim 30 Kamel and Bender teach a device as recited in claim 4 and is rejected given the same reasoning as above.

Regarding claim 33 Kamel and Bender teach a device as recited in claim 7 and is rejected given the same reasoning as above.

Regarding claim 34 Kamel and Bender teach a device as recited in claim 8 and is rejected given the same reasoning as above.

Regarding claim 35 Kamel and Bender teach a device as recited in claim 9 and is rejected given the same reasoning as above.

Regarding claim 36 Kamel and Bender teach a device as recited in claim 3 and is rejected given the same reasoning as above.

Regarding claim 37 Kamel and Bender teach a device as recited in claim 4 and is rejected given the same reasoning as above.

Regarding claim 39 Kamel and Bender teach a device as recited in claim 8 and is rejected given the same reasoning as above.

Regarding claim 40 Kamel teaches an article of manufacture for use in a mobile unit communicating data signals using a spread spectrum cellular network (see col. 1, lines 7-10). Kamel teaches a plurality of base stations coupled to the cellular network, each base station of the plurality of base stations including means for transmitting a pilot signal sequence (see col. 2, lines 55-64 and col. 4, lines 55-57). Kamel teaches a mobile unit coupled to the cellular network and assigned to one of the plurality of base stations (active base station) (see col. 2, lines 55-64 and col. 4, lines 58-60, base station transmitting channel D1 relates to active base station). Kamel teaches receiving a signal of another of the plurality of base stations (target base station)

(see col. 4, lines 50-54). Kamel teaches determining the interference density to the target base station from the received signal (see col. 6, lines 60-65). Kamel does not specifically teach synchronizing an orthogonal code sequence with the orthogonal code sequence boundary of the target base station's pilot sequence. Kamel does teach base stations with different P/N code sequences that are orthogonal to each other (see col. 5, lines 27-31). Bender teaches synchronizing an orthogonal code sequence with the orthogonal code sequence boundary of another pilot sequence (see col. 8, lines 42-59). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device adapt to include synchronizing an orthogonal code sequence with the orthogonal code sequence boundary of the target base station's pilot sequence because the device in Kamel teaches base stations with different P/N code sequences that are orthogonal to each other (see Kamel, col. 5, lines 27-31) and modifying it to include the synchronization in Bender (see, Bender col. 8, lines 42-59) would allow for the mobile station in Kamel to more accurately determining the interference density to the target base station from the received signal (see Kamel, col. 6, lines 60-65).

Regarding claim 41 Kamel and Bender teach a device as recited in claim 2 and is rejected given the same reasoning as above.

Regarding claim 42 Kamel and Bender teach a device as recited in claim 3 and is rejected given the same reasoning as above.

Regarding claim 43 Kamel and Bender teach a device as recited in claim 4 and is rejected given the same reasoning as above.

Regarding claim 46 Kamel and Bender teach a device as recited in claim 7 and is rejected given the same reasoning as above.

Regarding claim 47 Kamel and Bender teach a device as recited in claim 8 and is rejected given the same reasoning as above.

Regarding claim 48 Kamel and Bender teach a device as recited in claim 9 and is rejected given the same reasoning as above.

Regarding claim 49 Kamel and Bender teach a device as recited in claim 3 and is rejected given the same reasoning as above.

Regarding claim 50 Kamel and Bender teach a device as recited in claim 4 and is rejected given the same reasoning as above.

Regarding claim 52 Kamel and Bender teach a device as recited in claim 8 and is rejected given the same reasoning as above.

Claims 6, 12, 19, 25, 32, 45, and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamel et al. (US 6,496,531 B1) in view of Bender (5,978,413) and Wang (US 6,683,903 B1).

Regarding claim 6 Kamel and Bender teach a device as recited in claim 1 except for determining the orthogonal code sequence boundary for the active base station's pilot signal; and determining the orthogonal code sequence boundary for the target base station's pilot signal from the determined active base station's pilot signal orthogonal code sequence boundary. Wang teaches determining the orthogonal code sequence boundary and determining the orthogonal code sequence boundary between a plurality of orthogonal codes (see col. 2, lines 20-30). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device adapt to include determining the orthogonal code sequence boundary for the

active base station's pilot signal; and determining the orthogonal code sequence boundary for the target base station's pilot signal from the determined active base station's pilot signal orthogonal code sequence boundary because this would allow for the mobile station in Kamel to more accurately determining the interference density to the target base station from the received signal (see Kamel, col. 6, lines 60-65).

Regarding claim 12 Kamel, Bender, and Wang teach a device as recited in claim 6 and rejected given the same reasoning as above.

Regarding claim 19 Kamel, Bender, and Wang teach a device as recited in claim 6 and rejected given the same reasoning as above.

Regarding claim 25 Kamel, Bender, and Wang teach a device as recited in claim 6 and rejected given the same reasoning as above.

Regarding claim 32 Kamel, Bender, and Wang teach a device as recited in claim 6 and rejected given the same reasoning as above.

Regarding claim 38 Kamel, Bender, and Wang teach a device as recited in claim 6 and rejected given the same reasoning as above.

Regarding claim 45 Kamel, Bender, and Wang teach a device as recited in claim 6 and rejected given the same reasoning as above.

Regarding claim 51 Kamel, Bender, and Wang teach a device as recited in claim 6 and rejected given the same reasoning as above.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Calcev et al. U.S Pub. No.: US 2003/0099258 A1 discloses a method for controlling pilot power of a cell within a CDMA system.

Shen U.S. Patent No. 6,717,976 B1 discloses a method and apparatus for signal to noise power ratio estimation in a multi sub-channel CDMA receiver.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brandon J. Miller whose telephone number is 571-272-7869. The examiner can normally be reached on Mon.-Fri. 8:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on 571-272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

August 9, 2007

GEORGE ENG
SUPERVISORY PATENT EXAMINER